

ASSIGNMENT 1

Textbook Assignment: *Electronics Technician Volume 9 - Electro-Optics*, NAVEDTRA 12419, chapter 1 (all) and 2 (all).

- 1-1. What are the primary components of the human eye that control day and night vision?
1. Rods and cones
 2. Iris and pupil
 3. Retina and optic nerve
 4. Retina and rods
- 1-2. What component(s) of the eye is/are primarily responsible for color vision?
1. The retina
 2. The fovea
 3. The cones
 4. The rods
- 1-3. The average field of view for the human eye is about (a) how many degrees vertical by (b) how many degrees horizontal?
1. (a) 80 (b) 170
 2. (a) 60 (b) 180
 3. (a) 60 (b) 170
 4. (a) 80 (b) 160
- 1-4. In the process of the eye adaptation to dark, what substance, if any, do the rods secrete to adjust?
1. Iodopsin
 2. Rhodopsin
 3. Tears
 4. None
- 1-5. The early military efforts to remove the cover of darkness included the use of which of the following devices?
1. Torches
 2. Rockets
 3. Search lights
 4. All of the above
- 1-6. When observed through the sniper scope, sighted objects appear in varying shades of what color?
1. Blue
 2. Red
 3. Green
 4. Yellow
- 1-7. The above color was chosen for its ability to (a) stimulate what eye component(s) without (b) shutting down what eye component(s)?
1. (a) Iris (b) pupil
 2. (a) Cones (b) rods
 3. (a) Rods (b) cones
 4. (a) Retina (b) fovea
- 1-8. All electro-optical devices use some source of power to produce an image of an object through which of the following processes?
1. Illumination
 2. Amplification
 3. Thermal imaging
 4. All of the above
- 1-9. What is the central point of contact for all electro-optical equipment used in the Navy?
1. Space and Naval Warfare Systems Command, Washington, D.C.
 2. Naval Sea Systems Command, Washington D.C.
 3. Naval Surface Warfare Center, Crane, Indiana
 4. Naval Electronics Systems Command, San Diego, Calif.

- 1-10. What type of batteries provides the longest service life at temperatures above 15 degrees Fahrenheit?
1. Nickel-cadmium
 2. Lithium
 3. Alkaline
 4. Mercury
- 1-11. Which of the following range/purpose combinations pertain(s) to the AN/PAS-6 Metascope?
1. 12 inches/signaling
 2. 1 mile/signaling
 3. 1 foot/map reading
 4. Both 2 and 3 above
- 1-12. For what purposes, other than identification of long-range objects, is the MK37 NVS on the ship's signal bridge used?
1. Navigation and signaling
 2. Fire control and signaling
 3. Navigation and fire control
 4. Both 2 and 3 above
- 1-13. What is the AN/TVS-5 NVS mainly used for?
1. Aimed fire of weapons
 2. Navigation
 3. Infrared detection
 4. Map reading
- 1-14. Which of the following NVS units can be safely submersed to a depth of 50 meters?
1. Aquila
 2. KN200
 3. M921
 4. AN/PVS-4
- 1-15. Which of the following NV units enables the user to pilot rotary wing aircraft or to drive high-speed ground vehicles?
1. AN/PVS-5C
 2. AN/AVS-6
 3. CATSEYE
 4. KN200
- 1-16. In which of the following sights is the intensified image superimposed on the "real world" image?
1. AN/AVS-6 NVG
 2. AN/PAS-6 NVS
 3. AN/PVS-7B NVG
 4. CATSEYE NVG
- 1-17. Which type(s) of maintenance does an ET usually perform on night vision equipment?
1. Corrective maintenance
 2. Preventive maintenance
 3. Depot level repair
 4. All of the above
- 1-18. What type of batteries is being removed from service due to ecological problems?
1. Mercury
 2. Nickel-cadmium
 3. Alkaline
 4. Lithium
- 1-19. What type of batteries requires down time for recharging?
1. Mercury
 2. Nickel-cadmium
 3. Alkaline
 4. Lithium
- 1-20. What type of batteries has the shortest service life?
1. Mercury
 2. Nickel-cadmium
 3. Alkaline
 4. Lithium
- 1-21. Service use of lithium batteries must be approved by whom?
1. NAVOSH
 2. Naval Surface Warfare Center
 3. Navy Lithium Safety Review Board
 4. Both 2 and 3

- 1-22. How much does the Nite-Eye pocket scope weigh?
1. 10 ounces
 2. 15 ounces
 3. 2.5 pounds
 4. 4 pounds
- 1-23. What is the basis for the improved night observation and aimed fire of weapons provided by crew-served and individual-served sights?
1. Available light from the night sky
 2. Greater magnification
 3. Special mounting
 4. Attached illumination devices
- 1-24. Instructions for donning the AN/PVS-5C NVG are permanently mounted on the side of the unit.
1. True
 2. False
- 1-25. The eyes of some animals that hunt at night and sleep in the daytime have retinas composed almost entirely of cones.
1. True
 2. False
- 1-26. Which of the following military applications is not met by lasers used in the Navy today?
1. Training aids
 2. Communications
 3. Target destruction
 4. Landing systems
- 1-27. Lasers operate on which of the following principles?
1. Stimulated emission
 2. Spontaneous decay
 3. Stimulated decay
 4. Random direction
- 1-28. In what state do electrons in a lasing material reside?
1. Steady
 2. Excited
 3. Unstable
 4. Both 2 and 3 above
- 1-29. During lasing, a burst of light will be transmitted along which of the following paths?
1. Through the optical axis
 2. Through the 100% reflecting mirror
 3. Through the optical cavity
 4. Through the 99% reflecting mirror
- 1-30. Which of the following statements is/are true regarding differences in light from a conventional source and light from a laser?
1. The intensity of light from a conventional source decreases rapidly with distance
 2. The beam intensity of a laser remains almost the same as at the source
 3. A laser requires much lower power
 4. All of the above
- 1-31. Which of the following surfaces will not significantly change the divergence of the striking laser beam?
1. Curved specular
 2. Curved diffuse
 3. Flat specular
 4. Flat diffuse
- 1-32. For which of the following surfaces is the amount of divergence determined by the size of the beam?
1. Curved specular
 2. Curved diffuse
 3. Flat specular
 4. Flat diffuse

- 1-33. Which of the following surface(s) will reflect the striking laser beam in all directions?
1. Curved specular
 2. Curved diffuse
 3. Flat diffuse
 4. Both 2 and 3 above
- 1-34. What is the classification of a laser system that requires no controls?
1. Class 1
 2. Class 2
 3. Class 3
 4. Class 4
- 1-35. What is the classification of a laser that must NOT be viewed with optically aided devices?
1. Class 1
 2. Class 2
 3. Class 2A
 4. Class 3A
- 1-36. What is the classification of a laser that emits visible CW with optical radiation levels slightly above HPE?
1. Class 1
 2. Class 2
 3. Class 3B
 4. Class 4
- 1-37. The administrative controls of which class of lasers requires that an appropriate warning sign be placed outside the entrance of the work space?
1. Class 1
 2. Class 2
 3. Class 3A
 4. Class 3B
- 1-38. For which of the following laser classifications is the exposing of non-protected skin or material and viewing of a diffuse reflection considered hazardous?
1. Class 2
 2. Class 3A
 3. Class 3B
 4. Class 4
- 1-39. Which class of laser, if any, would not be hazardous when viewed directly?
1. Class 1
 2. Class 2
 3. Class 3A
 4. None
- 1-40. Laser equipment enhances tactical ability by aiding which of the following functions?
1. Target designation
 2. Aimed firing
 3. Target ranging
 4. All of the above
- 1-41. Which of the following are NOT categories of laser equipment?
1. Markers/designators
 2. Aiming/destruction devices
 3. Pointers/aiming devices
 4. Rangefinders
- 1-42. Which of the following lasers is used to obtain a close estimate of range to a target or to designate a target for laser guided munitions and can directly accept a Night Vision Sight?
1. LTM 86
 2. SOFLAM
 3. TD 100A
 4. AIM-1DLR
- 1-43. The LTM 86 is classified as what type of laser?
1. Class 4 laser
 2. Class 3B laser
 3. Marker/designator
 4. Rangefinder

- 1-44. The TD 100A is categorized as what type of device?
1. Class 4 laser
 2. Class 3B laser
 3. Marker/designator
 4. Pointer/aiming device
- 1-45. Which of the following is a requirement for using the infrared mode of the TD 100A laser?
1. Must be within a range of 50 yards
 2. Must use an extra power device
 3. Must use night vision equipment
 4. Must use safety eye wear with an OD of 1 at a wavelength of 670 nano-meters
- 1-46. Which of the following laser devices has an adjustable intensity beam?
1. LTM 86
 2. SOFLAM
 3. TD 100A
 4. AIM-1DLR
- 1-47. Which of the following laser devices would be used to obtain a close estimate of range to a target under starlit or moonlit conditions?
1. AN/KAS-1
 2. M931
 3. AN/PVS-X
 4. AIM-1DLR
- 1-48. What process is used to convert infrared energy to visible light?
1. Thermal imaging
 2. Heat emission
 3. Passive detection
 4. Active detection
- 1-49. What laser device is used by the Navy for stand-off detection of nerve agents?
1. AIM-1DLR
 2. M931
 3. AN/KAS-1
 4. AN/PVS-X
- 1-50. The AN/KAS-1 CWDD can be used for which of the following functions?
1. Chemical warfare advance warning
 2. Navigation
 3. Search and rescue
 4. All of the above

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(Refer to instructions in front of course)

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Electronics Technician, Volume 9, Electro-Optics	82419
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CITY, STATE

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PENSACOLA FL 32509-5237

Subj: ELECTRONIC TECHNICIAN, VOLUME 9, ELECTRO-OPTICS, NAVEDTRA 82419

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